

## REMARKS

Applicant appreciates the courtesies extended by Examiner Lien Tran during an interview on April 4, 2003 with Applicant's attorney, Jeffrey A. Wolfson. The comments appearing herein are substantially in accord with those presented and discussed during the interview.

Claims 1-14 and 29-40, as amended, and new claim 41 are pending for the Examiner's review and consideration. Claims 1 and 39 have been amended to recite preferred confectionery compositions that are nutritious and exciting to eat according to the invention (*See, e.g.*, Specification at ¶ 9, line 1) and to recite that the resultant product sets to provide a stable shape to the product (*See, e.g.*, Specification at ¶ 21, lines 4-6; ¶ 32, lines 1-7; and ¶ 46, lines 2-4). Claims 1, 9, and 39 have also been amended to recite a preferred embodiment of about 6 to 15 weight percent sugar to control the hardness of the fat (*See, e.g.*, Specification at ¶ 37, lines 2-3 and 9-10). Claim 13 has been amended accordingly. Claim 6 has been rewritten in independent form and amended to exclude beetroot, as well as to correct a typographical error in the translation of "corn," remove the sub-group of "sweetcorn" that is encompassed by corn and the duplicative French word for zucchini, and to translate a few vegetable materials that were improperly translated or not translated at all. Support exists in the priority application and can be provided more clearly if required. Claims 8 and 9 were amended to depend from claim 6. Claim 36 has been amended to correctly translate "rocher" to rock form. Claim 39 now recites the ratio of non-cereal vegetable solids to fat is about 1:2 to about 3:1, that the fat provides snap and gloss in addition to the melt-in-the-mouth feel (*See, e.g.*, Specification at ¶ 28), and that the sugar content is selected to reduce the water activity to about 0.65 or less (*See, e.g.*, Specification at ¶ 37, lines 2-3 and 9-10 for sugar content and hardness of the fat phase and ¶ 38, lines 5-6 for water activity). Claim 39 has also been amended to recite that the mixture is refined to facilitate formation of the matrix, whereby the fat surrounds the non-cereal vegetable solids (*See, e.g.*, Specification at ¶ 12, line 2; ¶ 24, lines 10-13; ¶ 45, lines 1-2; and ¶ 46, lines 2-4). Claim 40 has been corrected accordingly based on the amendments to claim 39, and new claim 41 recites various features in combination that have been discussed above and shown to be explicitly supported in the specification. Accordingly, as no new matter has been added, entry of the claims and the amendment as a whole is warranted at this time.

Applicants would like to set forth a brief summary to help highlight the important features of the present invention to the Patent Office that are distinct from the cited prior art reference. The present invention is directed to a nutritious confectionery product that has a refined mixture of vegetable solid content to provide nutritional content and

includes fats including cocoa butter or derivatives thereof, vegetable fat, or a combination thereof, in amounts of at least 25 percent by weight to provide a confectionery texture. The product further contains sugar in an amount from about 6 to 15 weight percent to control the fat hardness in claims 1, 9, 39, and 41. Claim 6 recites specific vegetables that can be included, none of which are taught by the prior art of record in a nutritious confectionery product as presently recited. The nutritious confectionery of the present invention promotes vegetable consumption, especially for those who do not like the taste of vegetables, while trying avoid including excess sugar that reduces the nutritious aspect of the claimed invention. Thus, the advantages of the present invention is that it is a vehicle for vegetable consumption, while offering a pleasant taste and confectionery texture much like chocolate or other confectionery products. Importantly, the confectionery product sets into a stable shape that has a confectionery texture.

Claims 1-14 and 29-40 were rejected under 35 U.S.C. § 103(a) as being obvious over DE 2746479 to Bayer AG ("Bayer") for the same reasons as paragraph 6 of paper no. 7, and the Examiner's reasoning is as set forth on pages 2-3 of the present Office Action. The Office Action maintains that Bayer discloses at least 25% by weight solid fat because one example contains 21% cocoa butter and 20% milk butter. The Office Action also indicates there is no showing of criticality or unexpected result from the types of fats claimed, or that the fat produces a different result than that of Bayer. Also, the Examiner alleges that no showing has been made as to how the claimed product is structurally different from Bayer, since the fat is "obviously" in a continuous phase.

Bayer discloses a confectionery with an adulterant consisting of dried beet, bran and Soya flour. Bayer does disclose that 5-70 percent of dried fiber can be used. The following examples are disclosed in the cited reference: Example 1 recites: 13% cocoa, 21% cocoa butter, 2% Soya flour, 20% whole milk powder, 29% sugar and 15% bran; Example 2 recites: 13% cocoa, 21% cocoa butter, 2% Soya flour, 20% whole milk powder, 29% sugar and 15% beet; Example 3 recites: 26% hazelnut, 14% cocoa butter, 33% sugar, 13% whole milk powder, 4% Soya flour, and 10% beet.

Bayer does not teach all the components presently claimed. For example, independent claims 1, 39, and 41, and dependent claim 9, each recites sugar in an amount from about 6 weight percent to 15 weight percent sugar to control hardness of the solid fat. Bayer teaches nothing about the hardness of the solid fat, or that the amount of sugar can help control the hardness to achieve the desired and claimed confectionery texture. Moreover, Bayer *teaches away* from the presently claimed invention by disclosing sugar in amounts of greater than 29 weight percent in Examples 1-3. In fact, Example 3 discloses 33 weight

percent sugar. These sugar contents are too high, resulting in a product that does not have the desired hardness that results from the claimed amount of about 6 to 15 weight percent sugar. Also, Bayer's high sugar contents, which are almost *twice* that of the claimed invention, unduly detract from the healthy nature of the claimed nutritious confectionery products and at the same time leave less available "space" in the product for the claimed non-cereal vegetable solids. Bayer simply provides increased fiber to help with digestion and decrease appetite, but Bayer does not teach providing actual nutritional content while minimizing sugar content, like the presently claimed non-cereal vegetable solids. Further, the claimed sugar content helps control the water activity to about 0.65 or less as presently recited in claims 39 and 41. The inventive products, as a result of the claimed low water activity, have a significantly longer shelf-life than Bayer's dietary fiber confectioneries that do not even suggest the benefits of a low water activity or long shelf-life. Further, Bayer completely fails to teach to reduce water activity to about 0.65 or less, as presently recited.

Claim 6 has also been rewritten in independent form to recite various vegetables in Markush format. Bayer accidentally teaches beets, a vegetable, since they coincidentally include fiber content. Bayer, of course, is directed exclusively to providing confectionery materials including high fiber content and otherwise teaches nothing else about providing nutritious products having high vegetable content. Thus, claim 6 recites the invention with specific vegetables that are not mentioned or discussed at all in Bayer. Each of claims 1, 6, 9, 39, and 41 recites features that clearly are not disclosed or suggested by the Bayer reference, as discussed at the interview with the Examiner. Additional reasons for the patentability of these claims are as follows.

The Office Action indicated that Example 2 of Bayer discloses more than the 25% fat recited in the claims, however, the Office Action has improperly included the 20% "milk butter" with the 21% cocoa butter of Example 2. On the contrary, "milk butter" is not cocoa butter or a derivative thereof, vegetable fat, or a combination thereof, as presently recited. Therefore, it is not a fat as claimed, and cannot be considered as such since it has a negative effect that precludes attainment of other recited features, which means that Bayer still fails to teach inclusion of more than 21% of a fat including a cocoa butter or derivative, vegetable fat, or combination thereof. Therefore, Bayer does not disclose or suggest at least about 25 % by weight of the claimed fat component, as previously stated by Applicants.

In particular, milk butter, although it can be included in the product in small amounts as an optional ingredient, cannot be used as a substitute for the basic fat content recited. As noted by Applicants in the previous Amendment, milk butter undesirably alters the transition temperatures at which crystals form in the claimed fat component by slowing

down the rate of crystallization and inhibiting or preventing proper fat crystallization. This improper milk butter effect undesirably minimizes or eliminates the gloss, snap, and color desired in confectionery products, and also creates processing problems such as during molding. The low-melting temperature triglycerides in milk butter relative to cocoa butter and vegetable fats, if substituted for part of the claimed fat content, would effectively dilute the claimed fat content and undesirably soften the chocolate, which for example can cause shipping, storage, and eating problems. Moreover, milk butter substitution would facilitate the undesirable presence of chocolate bloom, which is a confectionery defect that occurs when fat melts and recrystallizes in the wrong form as blobs of fat on the surface of the product. The present invention recites certain fat components that should possess crystallization properties necessary for forming stable, shaped confectionery products (See Specification, ¶ 30, lines 6-9 and ¶ 32, lines 3-7), and also recites that the product has snap and gloss. Bayer inherently does not teach products having snap and gloss as presently recited, since Bayer includes a sufficiently large amount of milk butter to preclude this. For these reasons, milk butter would materially and undesirably affect the required properties if used to substitute for any of the required 25% by weight of the claimed fat component. As such, Bayer still fails to teach the at least about 25 weight percent of a fat component that includes cocoa butter or derivatives thereof, vegetable fat, or combinations thereof, as presently recited. Also, the inclusion of milk butter in Bayer's example would provide a product that does not have gloss or snap, and therefore claims 39 and 41 are separately patentable for this reason.

Independent claims 39 and 41, and dependent claim 8, also recite a ratio of non-cereal vegetable solids to fat of about 1:2 to about 3:1. This is important because it provides a compromise between a product that will set properly and have a stable shape, as presently recited, and one that will simply be formed as a shaped bar or mixture like that of Bayer. The recited product sets, while Bayer does not teach a product that does. The ratio of components recited also provides a compromise between having sufficient nutritional value and melt sensation. Applicants have determined that this ratio provides a surprising and unexpected benefit as follows. If too little crystallizable fat is included, the product will not set into a stable shape and a confectionery texture cannot be achieved. On the other hand, if too much fat is included, the nutritional content will be too low and the melt-in-the-mouth sensation recited in claims 39, 41, and dependent claim 9 will not be properly achieved (See also Specification at ¶ 29). Thus, the amount of fat must be controlled to achieve the claimed characteristics, and Bayer fails to teach such a ratio with such characteristics as presently claimed, e.g., snap, gloss, a formulation that sets, a stable product, and melt-in-the-mouth

sensation. At best, it could be inferred that Bayer might teach a stable product. Any teaching to use a fat for cost or flavor is irrelevant to the present claims, which require certain crystallizable fats to provide the claimed characteristics. Bayer fails to teach the importance of such fat choices and amounts, particularly as compared to the vegetable solids content, as presently recited.

Examining Bayer's teachings more carefully, it becomes clear that Bayer fails to teach a product that is remotely close to that discovered by the inventors and presently claimed. Example 1, of course, does not even disclose or remotely suggest non-cereal vegetable solids, as presently recited. Example 2 of Bayer teaches a higher vegetable solids to fat ratio (roughly 1:3) than the about 1:2 maximum presently recited in claims 8, 39, and 41, which means too much fat is taught by Bayer. Example 2 of Bayer has an enormously large total fat content of 50 weight percent since the Patent Office continues to consider the cocoa butter and the whole milk butter together. The presence of milk butter and such high total amounts teaches that Bayer's product is too soft and difficult to properly demold, which is why slabs are created rather than confectionery that sets as presently claimed. Moreover, the products of Bayer's Example 2 are too waxy and do not have a proper melt-in-the-mouth sensation as presently recited in claims 9, 39, and 41. As a result, while Bayer's high (29%) sugar content helps harden Bayer's overly soft product due to the fat content, the total fat and sugar is almost 4/5 of the total content leaving an unhealthy product compared to that of the present invention. Example 3 of Bayer teaches an amount of fat that is lower than the presently claimed amount, while having a 33 percent sugar content well above what is nutritionally acceptable. These products cannot form properly and in fact must be pressed and extruded, *i.e.*, Bayer's Example 3 does not teach a set, stable product. Bayer's high amount of powdered contents (hazelnuts, sugar, and powdered beet cossettes) in Example 3 also cannot achieve a melt-in-the mouth sensation, as presently claimed. Indeed, Example 3 of Bayer does not refine the mixture and cannot possibly provide a continuous fat phase that serves as a matrix for the vegetable solids, as presently recited in various claims. As a result, Example 3 cannot provide a confectionery texture and cannot provide the snap and gloss presently recited. On the contrary, Example 3 teaches a product that is gritty and has no snap, gloss, or melt-in-the mouth sensation.

In addition to the specific differences in the teaching of Bayer compared to the specifically recited components and characteristics of the present invention, Bayer is directed to a confectionery that includes an adulterant that swells in the intestine to improve digestion and reduce the sensation of hunger, *i.e.*, to *discourage eating*. It does not teach or suggest a nutritious confectionery product that provides a pleasurable, tasty, vehicle for vegetable

consumption, designed especially to encourage children and others who do not like the taste of vegetables to increase their intake of such food (*See, e.g.*, Specification at ¶ 8). The Office Action has confused these statements (Office Action, pages 2-3). Bayer teaches a product that is "tastier and more consumer-acceptable" than *tablets or other pressed materials* (Bayer, page 1, ¶ 5) Thus, Bayer is comparing its product to *medicine*-type formulations that are not typically even considered food. Bayer also specifically teaches that the fiber content is designed to swell, increase residence time of its fiber confectionery product, and teaches that "the feeling of hunger is lowered as a result" (Bayer, paragraph bridging pages 1-2). As a whole, Bayer teaches a product that is intended to inhibit eating, while the present invention recites a nutritious confectionery product with nutritional content that is designed to enhance and increase consumption of vegetables without an unduly high sugar content like Bayer. This is the essence of a reference *teaching away* from a claimed invention, and nothing on the record has contradicted this point.

Although Bayer does mention in Example 1 that refining is used, it fails to teach any of these specific features and the amount and type of fat presently claimed. Claims 6, 39, and 41 each recite that the claimed product is refined. Absent both the proper refining and the amount and type of fat presently recited, however, a continuous phase of fat will not properly form around the vegetable solids and the surprising and unexpectedly pleasing yet nutritious confectionery product of the present invention cannot be obtained.

Although Bayer does disclose that beet cossettes can be finely ground, it fails to teach grinding particles to a size of about 80 microns or less--much less the surprising and unexpected benefits of doing so--as presently recited. Indeed, the claimed particle size surprisingly provides the continuous phase and proper dispersal therein, which facilitates providing the claimed confectionery texture to the claimed product. Bayer specifically states that particle size can be modified in any way so as to affect the *chewiness*. The present invention, however, obtains a smooth, melt-in-mouth sensation and mouthfeel as a result of the finely ground vegetable particles being properly *dispersed* in the fat matrix, which properties, size, and dispersed relationship to the fat component are not taught by Bayer. There is no teaching in Bayer that the specific size recited, *e.g.*, a magnitude of order smaller, helps obtain the textural advantages of the present invention. The Office Action maintains that it would be obvious to optimize particle size for taste, however, that is not the primary reason the recited particle size is so surprisingly and unexpectedly important, as noted herein. More importantly, the "finely ground" size of beet cossette in Bayer may be a size that improves taste, but Bayer still provides no suggestion to modify particle size sufficiently to obtain the claimed texture characteristics in combination with the other recited features.

Further, even with Bayer's motivation to change particle size, the reference still does not teach that the particles should be of a size below 80 microns, as presently recited. Indeed, even if Bayer provided such motivation, it did not provide any expectation of success to one of ordinary skill in the art to successfully use a certain size particle to obtain the claimed dispersal and claimed confectionery texture.

Furthermore, several dependent claims have additional features that patentably distinguish the present invention from Bayer even more clearly. Claim 2 recites at least about 30 weight percent fat, which is almost 50% more fat from cocoa butter, derivatives, vegetable fat, or a combination thereof than the maximum taught by Bayer. Of course, the maximum fat content is also limited by the ratio of non-cereal vegetable solids to fat, e.g., in claims 8, 39, and 41. Importantly, claim 7 recites that the product is formed from modified chocolate, wherein at least a portion of the cocoa solids, sugar solids, or milk solids, or a combination thereof, has been removed and replaced with vegetable solids. As discussed above, this is explicitly supported by the specification and provides a patentable advance over Bayer by solving a long-felt problem in the art. Indeed, Bayer even *teaches away* from this substitution by expressly disclosing that chocolate itself should be mixed in molds or slabs with dietary fiber to form the Bayer invention. Even Example 3 of Bayer fails to teach such a replacement based on chocolate, as it simply discloses combining cocoa butter with dietary fiber and a few other ingredients. The mere presence of cocoa butter without disclosure of cocoa mass does not even suggest the feature recited in claim 7, which inherently recites cocoa mass since it is a part of the chocolate that has been partly replaced. Claim 9 recites preferred amounts of sugar content to help control the hardness of the product, and these are not taught by Bayer. In fact, Bayer teaches much higher sugar contents that detract from the claimed nutritious product. Claim 10 recites that the fat consists of specific materials, none of which are taught in the proper amount by Bayer. Claim 13 recites a combination of vegetables in the solids, which can provide unique mixtures of vegetable material in a desirable, edible form. Bayer fails to teach the features of claim 13, as it discloses beets as a dietary fiber and fails to suggest any other vegetables at all, much less the inclusion of a combination thereof. Claim 13 provides the wonderful and nutritious advantage of providing multiple types of vegetables into the dietary intake of consumers.

In sum, Bayer does not disclose or suggest a confectionery product with a fat content above 25 weight percent, particularly a fat consisting essentially of cocoa butter or a derivative thereof, a vegetable fat, or a combination thereof, so as to impart a confectionery texture to the product. Bayer also fails to teach a sugar content of about 6 weight percent to 15 weight percent; any vegetable content other than beet cossettes; a product with a melt-in-

the-mouth sensation; a product that sets to form a stable shape; a ratio of non-cereal vegetable solids to fat of about 1:2 to about 3:1; and to reduce water activity to about 0.65 or less. Bayer also does not teach grinding vegetable solids to a size of about 80 microns or less for confectionery texture purposes, which the previous Office Action implicitly acknowledges by indicating that taste perception is the reason one of ordinary skill in the art might optimize particle size. Accordingly, Bayer has significantly different components and amounts, a different form, and simply cannot provide the characteristics recited in the present invention, in addition to teaching away from the recited invention. Thus, Applicants respectfully request that the rejection of claims 1-7, 10-14, and 29-40 under 35 U.S.C. § 103(a) be reconsidered and withdrawn, since no *prima facie* case of obviousness has been shown on the record.

Applicant submits that the entire application is now in condition for allowance, early notice of which would be appreciated. Should the Examiner not agree, then a personal or telephonic interview is respectfully requested to discuss any remaining issues and expedite the eventual allowance of the application.

Respectfully submitted,

Date: April 7, 2003

  
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